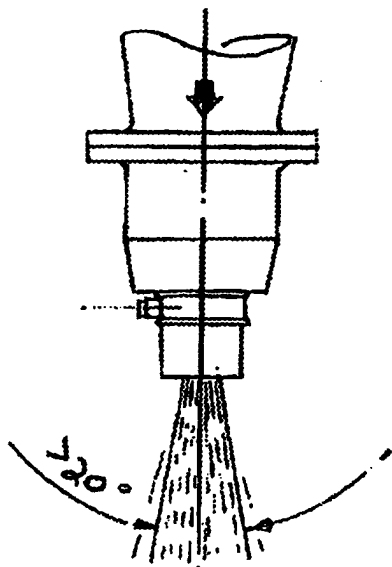
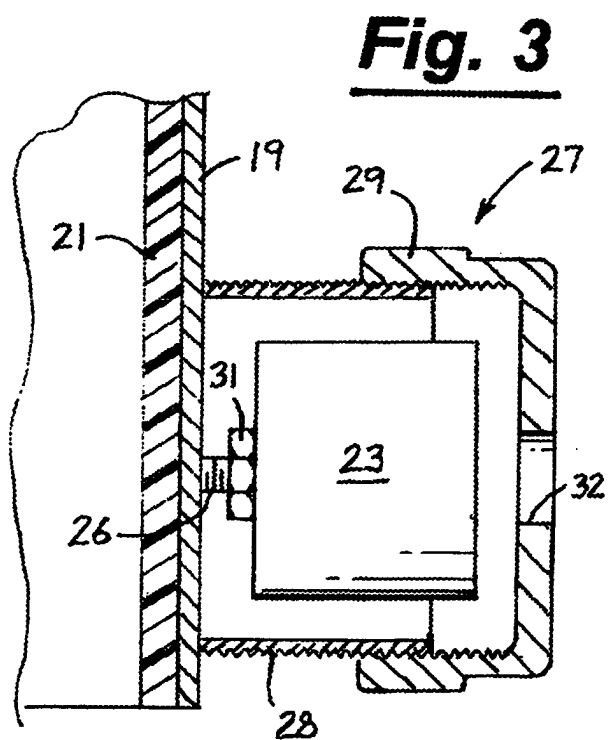
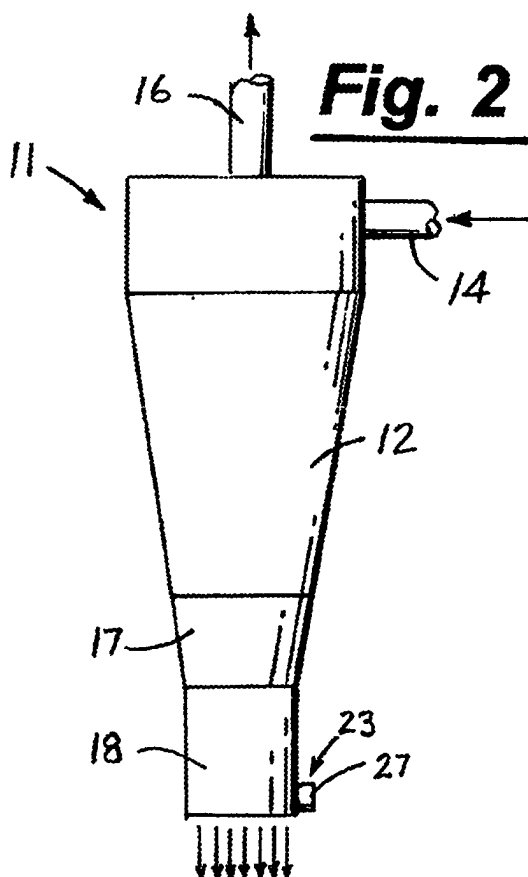
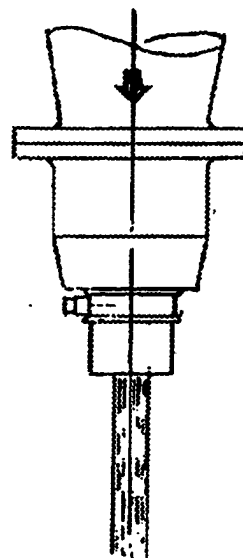


**Fig. 1A** (PRIOR ART)



**Fig. 1B** (PRIOR ART)



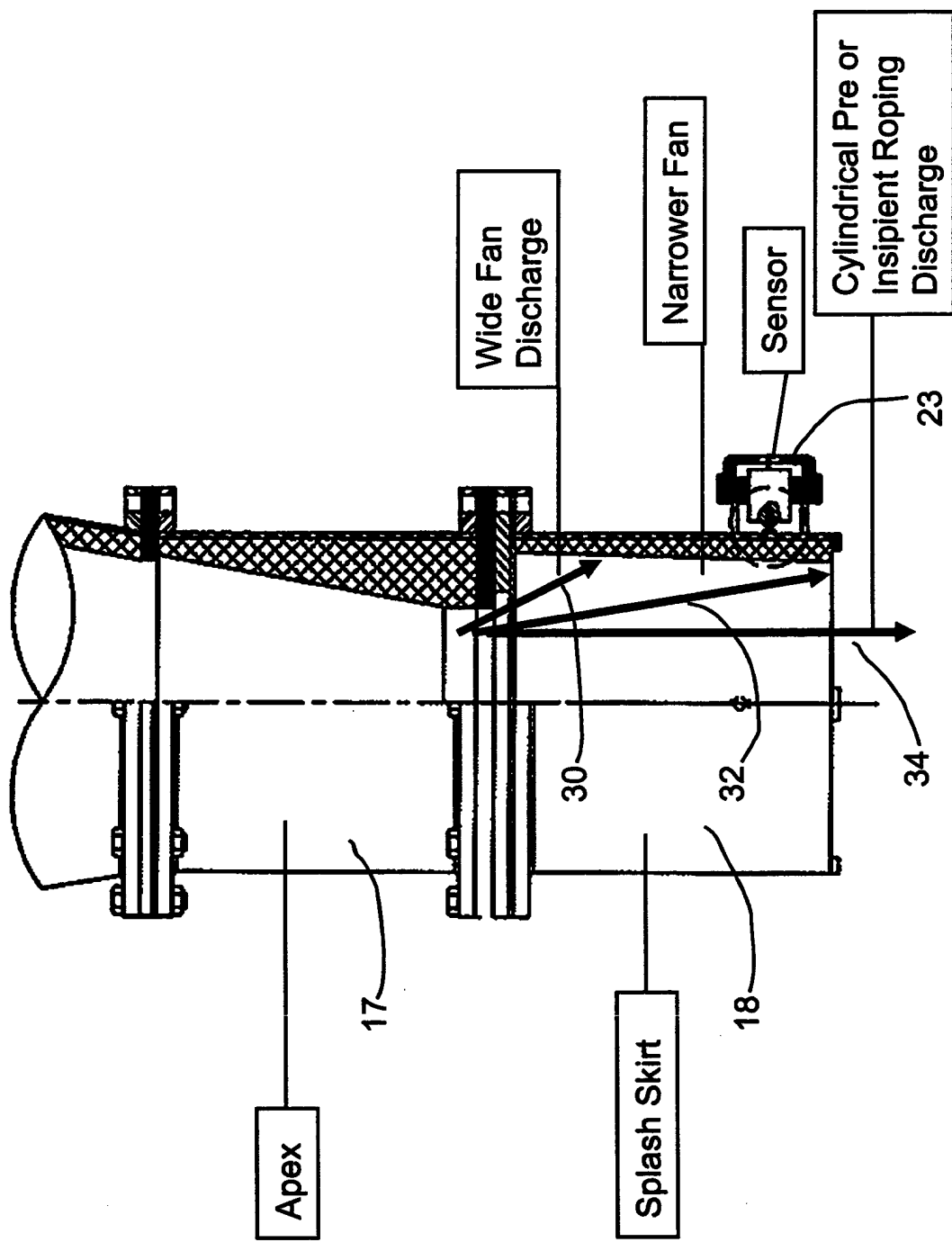


Figure 4

# Roping Detector

6 psi Current - good flow

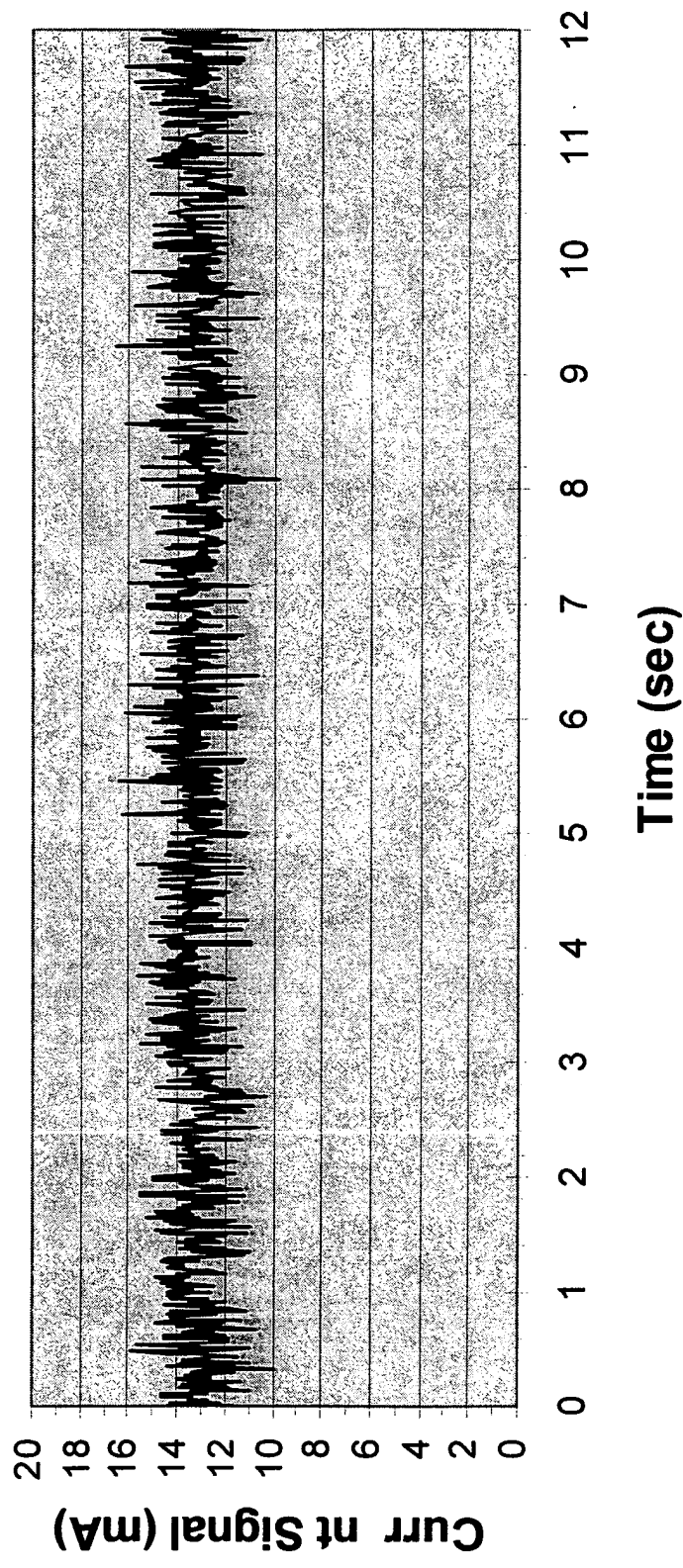


FIG. 5

**8 psi Current - good flow but missing skirt some**

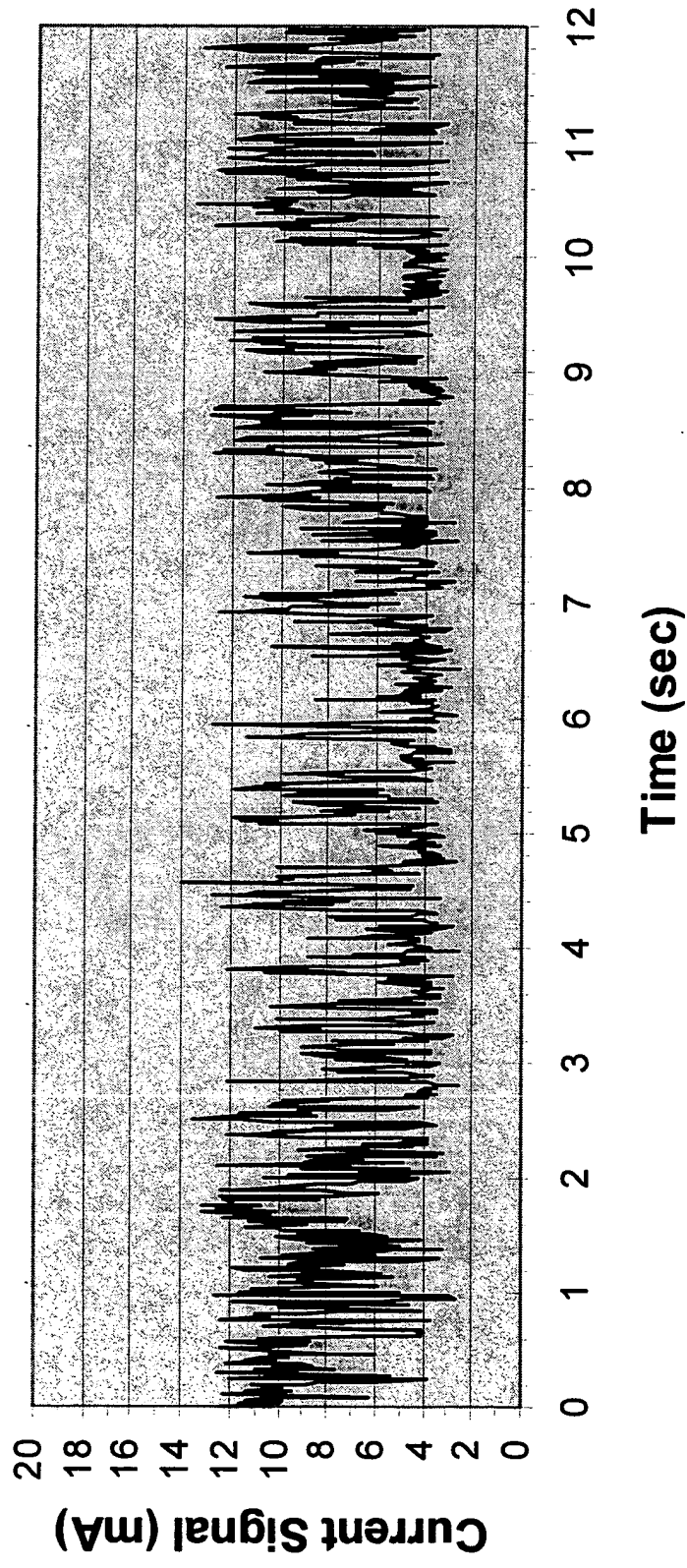


FIG. 6

## 10 psi Current - obvious roping

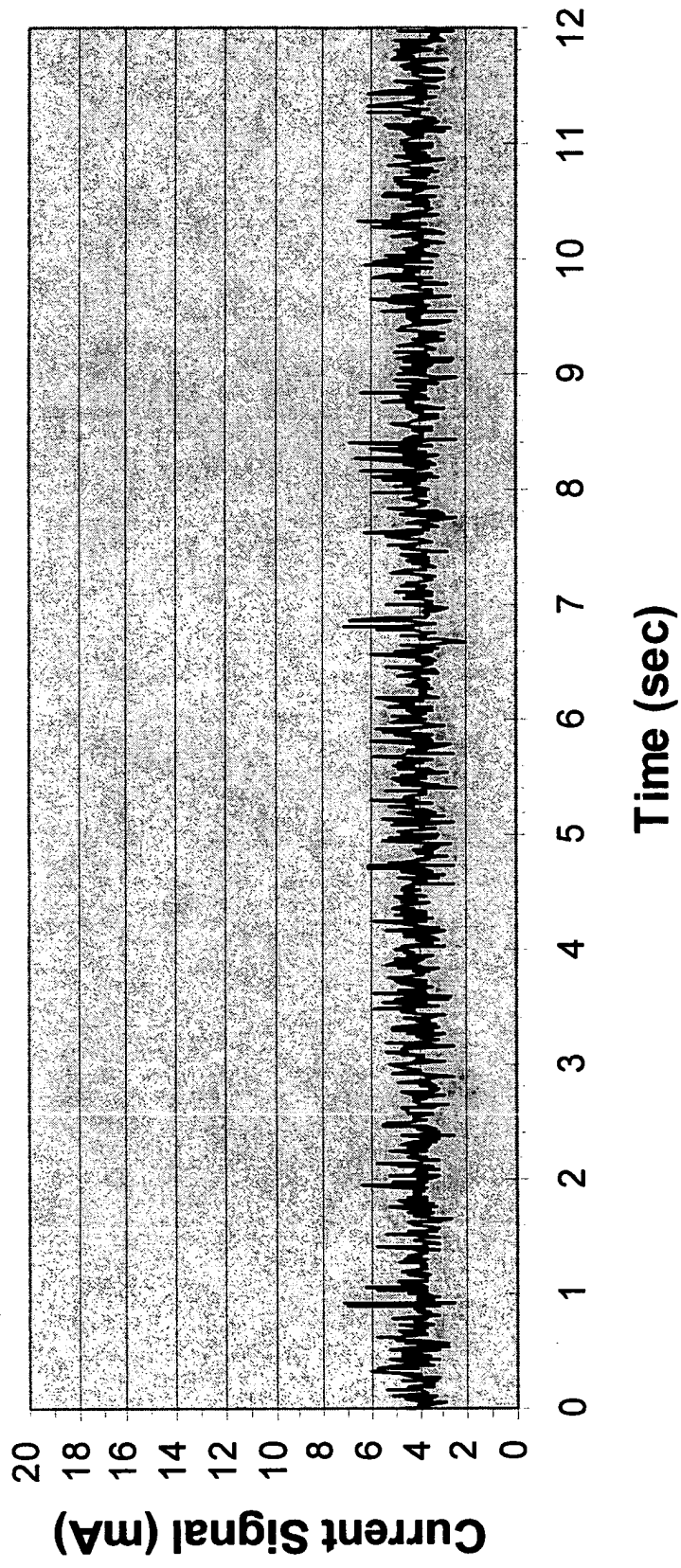


FIG. 7